ABSTRACT OF THE DISCLOSURE

A burner comprises a fuel distributor having a plurality of fuel injection holes through which a fuel gas is injected into a combustion space 3, an air injector 2 placed to surround the fuel distributor and having a plurality of air injection holes through which air is injected into the combustion space 3, a temperature detector placed such that a temperature detecting portion at a tip end thereof is located within the air injection hole, a body portion thereof is contained within the air injector, and an air layer is formed between the temperature detector and an inner wall of the air injector 9, and a flame detector connected to the temperature detector, for detecting a flame condition based on temperature information within the combustion space which is obtained from the temperature detector.